

CLAIMS

We claim:

1. A process for repairing a multi-layer coating of a substrate having at least one blemished area within a surface of the coating, wherein repair of the coating is performed with an aqueous clear coat by means of blending-in within the surface, wherein the process comprises the following successive steps:
 - A) optionally, preparing the blemished area on the substrate to be coated in conventional manner,
 - B) sanding the blemished area and the transitional zone between the blemished area and intact existing coating,
 - C) optionally, cleaning the sanded repair surface,
 - D) applying a pigmented base coat onto the sanded and cleaned repair surface and fading out into the areas of the intact existing coating, which border the repair surface, with the base coat,
 - E) applying a two-component aqueous clear coat based on an OH-functional binder and a polyisocyanate crosslinking agent having free isocyanate groups at conventional spraying viscosity onto the base coat,
 - F) fading out into the areas of the intact existing coating, which border the surface coated with the base coat, with the aqueous clear coat material, wherein the aqueous clear coat in step F) exhibits the same spraying viscosity as the aqueous clear coat applied in step E),
 - G) curing the resultant coating comprising base coat and clear coat and optionally,
 - H) sanding the cured coating and polishing the sanded area.
2. A process for repairing a multi-layer coating of a substrate having at least one blemished area within a surface of the coating, wherein repair of

the coating is performed with an aqueous pigmented coat by means of blending-in within the surface, wherein the process comprises the following successive steps:

- 5 A) optionally, preparing the blemished area on the substrate to be coated in conventional manner,
- B) sanding the blemished area and the transitional zone between the blemished area and intact existing coating,
- C) optionally, cleaning the sanded repair surface
- 10 D1) applying a pigmented, two-component one-layer aqueous top coat based on an OH-functional binder and a polyisocyanate crosslinking agent having free isocyanate groups at conventional spraying viscosity onto the sanded and cleaned repair surface,
- E1) fading out into the areas of the intact existing coating, which border the repair surface, with the one-layer aqueous top coat material,
- 15 wherein the one-layer aqueous top coat in step E1) exhibits the same spraying viscosity as the one-layer aqueous top coat applied in step D1),
- F1) curing the resultant coating comprising the one-layer aqueous top coat and optionally,
- 20 G1) sanding the cured coating and polishing the sanded area.

3. The process according to claim 1, wherein curing in step G) proceeds at temperatures of below 80°C

25 4. The process according to claim 1, wherein curing in step G) proceeds at temperatures of 20-60°C.

5. The process according to claim 1, wherein the OH-functional binders selected from the group consisting of OH-functional
30 polyurethanes, OH-functional poly(meth)acrylates and OH-functional poly(meth)acrylate/polyester hybrids.

6. The process, according to claim 1, wherein an aqueous base coat is applied in step D).
7. The process, according to claim 1, wherein a physically drying base coat is applied in step D).
8. The process according to claim 1, wherein the aqueous clear coat is applied at a spraying viscosity of 16-28 s/ 4mm/ 20°C.
9. The process according to claim 7, wherein the aqueous clear coat is applied at a spraying viscosity of 16-20 s/ 4mm/ 20°C.
10. The process according to claim 2, wherein curing in step F1) proceeds at temperatures of below 80°C.
11. The process according to claim 2, wherein curing in step F1) proceeds at temperatures of 20-60°C.
12. The process according to claim 2, wherein the OH-functional binders selected from the group consisting of OH-functional polyurethanes, OH-functional poly(meth)acrylates and OH-functional poly(meth)acrylate/polyester hybrids.
13. The process according to claim 2, wherein the one-layer aqueous top coat is applied onto a primer surfacer layer.
14. The process according to claim 2, wherein the aqueous pigmented one-layer top coat is applied at a spraying viscosity of 16-28 s/ 4mm/ 20°C.

15. The process, according to claim 12, wherein the aqueous pigmented one-layer top coat is applied at a spraying viscosity of 16-20 s/4mm/ 20°C.

5 16. The process according to claim 1, wherein the substrate comprises vehicles.

17. The process according to claim 2, wherein the substrate comprises vehicles.